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Experimental results; 4.6 Conclusions; References; 5 - Molten glass-infiltrated photonic crystal fibers; 5.1 Glassy materials: and why glass-infiltrated photonic crystal fibers (PCFs)?; 5.2 Glass-infiltrated PCFs: state of the art and fabrication techniques; 5.3 PBG guidance characteristics of composite all-glass PCFs; 5.4 Prospects and future directions; 5.5 Conclusions and final remarks; Acknowledgments
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Part 2 - Sensing and optofluidic applications; 6 - Microstructured optical fibre-based sensors for structural health monitoring applications; 6.1 Introduction to structural health monitoring applications and fibre Bragg grating sensors; 6.2 Microstructured optical fibres for temperature-insensitive pressure and transverse strain sensing; 6.3 Structural health monitoring-related applications of the butterfly microstructured optical fibres; 6.4 Conclusion and trends; Acknowledgements; References
7 - Liquid crystals infiltrated photonic crystal fibers (PCFs) for electromagnetic field sensing
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8.4 Applications of polymer fiber Bragg grating sensors

Sommario/riassunto

Combining the positive characteristics of microfluidics and optics, microstructured optical fibres (MOFs) have revolutionized the field of optoelectronics. Tailored guiding, diffractive structures and photonic band-gap effects are used to produce fibres with highly specialised, complex structures, facilitating the development of novel kinds of optical fibre sensors and actuators. Part One outlines the key materials and fabrication techniques used for microstructured optical fibres. Microfluidics and heat flows, MOF-based metamaterials, novel and liquid crystal infiltrated photonic crystal f
